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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,493	11/26/2003	Anand A. Kekre	VRT0062PIUS	9536
60429	7590	06/30/2006	EXAMINER	
CSA LLP 4807 SPICEWOOD SPRINGS RD. BLDG. 4, SUITE 201 AUSTIN, TX 78759			BAKER, PAUL A	
			ART UNIT	PAPER NUMBER
			2188	

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/723,493

Applicant(s)

KEKRE ET AL

Examiner

Paul A. Baker

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, 9-17, 19-30 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 8 and 16-18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/436,354. Although the conflicting claims are not identical, they are not patentably distinct from each other because a volume to store data on is a type of storage volume; furthermore taken in its broadest possible definition anything stored on a volume is data.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Instant Application: 10/723,493 Claim ----- (Limitation)	Co-pending Application: 10/436,354 Claim ----- (Limitation)
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Instant Application: 10/723,493 Claim ----- (Limitation)	Co-pending Application: 10/436,354 Claim ----- (Limitation)
1 – (a) A method comprising:	1 – (a) A method comprising:
1 – (b) creating a storage object corresponding to a data volume	1 – (b) creating a storage object corresponding to a storage volume
1 – (c) wherein said storage object comprises a point-in-time copy of said data volume	1 – (c) wherein said storage object comprises a point-in-time copy of said storage volume
1 – (d) and a data volume map; and	1 – (d) and a storage volume map; and
1 – (e) replicating said data volume utilizing said storage object	1 – (e) replicating said storage volume using said storage object

Claim Objections

Claim 18 is objected to because of the following informalities: There is an abrupt transition from the preamble to the body of the claim, for the sake of clarity it is suggested adding the words “further comprising:” or the like. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4,7,9-15,19-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Green et al. US PGPUB 2003/0167380.

In regards to claim 1, Green discloses a method comprising:

creating a storage object corresponding to a storage volume in figure 20, wherein said storage object comprises a point-in-time copy of said storage volume and a storage volume map in paragraph 131; and

replicating said storage volume using said storage object in figure 5 elements 520-540.

Applicant's disclosure states in paragraph 23 "...and a "snappoint" storage object including a point-in-time copy 216 or "snapshot" of said primary storage volume 210a..." and in paragraph 27 "A snapshot volume is a point-in-time copy of another volume (e.g., a primary storage volume). Therefore Green's snapshot is equivalent to applicant's point-in-time copy.

In regards to claim 2 Green discloses replicating said storage volume comprises, periodically replicating said storage volume in figure 3 time periods 5, 11 and 18.

In regards to claim 3, Green discloses creating a storage object comprises, creating a storage object corresponding to said storage volume, wherein said storage object comprises a virtual point-in-time copy of said storage volume in figure 3 element 352. According to applicant's disclosure (paragraph 27) a virtual point-in-time copy is an "instant snapshot", and such instant snapshots can be space optimized such

that only the data modified in the base storage volume or the snapshot itself is stored in the snapshot. Green's snapshot's 352, 354 and 356 show this functionality.

In regards to claim 4, Green discloses said creating a storage object comprises creating a first storage object corresponding to a first storage volume in figure 44 element 4412, wherein said first storage object comprises a first point-in-time copy of said first storage volume and a first storage volume map in paragraph 131, and

said replicating said storage volume comprises copying data from said first point-in-time copy of said first storage volume to a second storage volume in figure 44 element 4414.

In regards to claim 7, Green discloses identifying a first set of one or more modified regions of said first storage volume using said first storage volume map in figure 3 element 342.

In regards to claim 9, Green discloses creating a storage object further comprises, creating a second storage object corresponding to said first storage volume in response to said copying in figure 3 element 354.

In regards to claim 10, Green discloses creating a second storage object comprises, refreshing said first point-in-time copy of said first storage volume; and

creating a second storage object corresponding to said first storage volume in response to said refreshing, wherein said second storage object comprises said first point-in-time copy of said first storage volume and a second storage volume map in figure 5 elements 530 and 540 and figure 36 header and index also in figure 3 transition from element 243 to 344.

In regards to claim 11, Green discloses identifying a second set of one or more modified regions of said first storage volume using said second storage volume map in figure 3 element 344.

In regards to claim 12, Green discloses copying data from said first point-in-time copy comprises, copying data corresponding to said first set of one or more modified regions of said first storage volume from said first point-in-time copy of said first storage volume to said second storage volume using said first storage volume map in figure 2 elements 252, 254, 256 derived from element 235.

In regards to claim 13, Green discloses creating a second storage object comprises,

creating a second storage object corresponding to said first storage volume wherein said second storage object comprises a second point-in-time copy of said first storage volume and a second storage volume map in figure 3 element 354.

In regards to claim 14, Green discloses identifying a second set of one or more modified regions of said first storage volume using said second storage volume map in figure 3 element 344.

In regards to claim 15, Green discloses copying data from said first point-in-time copy comprises,

copying data corresponding to said first set of one or more modified regions of said first storage volume from said second point-in-time copy of said first storage volume to said second storage volume using said first storage volume map figure 3 element 352 being stored as figure 2 element 252.

In regards to claim 19, Green discloses an apparatus comprising:

means for creating a storage object corresponding to a storage volume in figure 20, wherein said storage object comprises a point-in-time copy of said storage volume and a storage volume map in paragraph 131; and

means for replicating said storage volume using said storage object in figure 5 elements 520-540.

Applicant's disclosure states in paragraph 23 "...and a "snappoint" storage object including a point-in-time copy 216 or "snapshot" of said primary storage volume 210a..." and in paragraph 27 "A snapshot volume is a point-in-time copy of another volume (e.g., a primary storage volume). Therefore Green's snapshot is equivalent to applicant's point-in-time copy.

In regards to claim 20, Green discloses said means for creating a storage object comprises means for creating a first storage object corresponding to a first storage volume in figure 44 element 4412, wherein said first storage object comprises a first point-in-time copy of said first storage volume and a first storage volume map in paragraph 131, and

said means for replicating said storage volume comprises means for copying data from said first point-in-time copy of said first storage volume to a second storage volume in figure 44 element 4414.

In regards to claim 21, Green discloses means for identifying a first set of one or more modified regions of said first storage volume using said first storage volume map in figure 3 element 342.

In regards to claim 22, Green discloses said means for creating a storage object further comprises, means for creating a second storage object corresponding to said first storage volume in figure 3 element 354.

In regards to claim 23, Green discloses said means for creating a second storage object comprises,

means for refreshing said first point-in-time copy of said first storage volume; and

means for creating a second storage object corresponding to said first storage volume, wherein said second storage object comprises said first point-in-time copy of said first storage volume and a second storage volume map in figure 5 elements 530 and 540 and figure 36 header and index also in figure 3 transition from element 243 to 344.

In regards to claim 24, Green discloses a machine-readable medium having a plurality of instructions executable by a machine embodied therein, wherein said plurality of instructions when executed cause said machine to perform a method comprising:

creating a storage object corresponding to a storage volume in figure 20, wherein said storage object comprises a point-in-time copy of said storage volume and a storage volume map in paragraph 131; and

replicating said storage volume using said storage object in figure 5 elements 520-540.

Applicant's disclosure states in paragraph 23 "...and a "snappoint" storage object including a point-in-time copy 216 or "snapshot" of said primary storage volume 210a..." and in paragraph 27 "A snapshot volume is a point-in-time copy of another volume (e.g., a primary storage volume). Therefore Green's snapshot is equivalent to applicant's point-in-time copy.

In regards to claim 25, Green discloses said creating a storage object comprises creating a first storage object corresponding to a first storage volume in figure 44 element 4412, wherein said first storage object comprises a first point-in-time copy of said first storage volume and a first storage volume map in paragraph 131, and

said replicating said storage volume comprises copying data from said first point-in-time copy of said first storage volume to a second storage volume in figure 44 element 4414.

In regards to claim 26, Green discloses identifying a first set of one or more modified regions of said first storage volume using said first storage volume map in figure 3 element 342.

In regards to claim 27, Green discloses said creating a storage object further comprises, creating a second storage object corresponding to said first storage volume in response to said copying in figure 3 element 354.

In regards to claim 28, Green discloses said creating a second storage object comprises, refreshing said first point-in-time copy of said first storage volume; and

creating a second storage object corresponding to said first storage volume in response to said refreshing, wherein said second storage object comprises said first point-in-time copy of said first storage volume and a second storage volume map in

figure 5 elements 530 and 540 and figure 36 header and index also in figure 3 transition from element 243 to 344.

In regards to claim 29, Green discloses a data processing system comprising:
a storage element to store a storage volume in figure 2 element 230; and
a volume replicator in figure 2 element 220 configured to,

create a storage object corresponding to said storage volume in figure 20,
wherein said storage object comprises a point-in-time copy of said storage
volume and a storage volume map in paragraph 131; and

replicate said storage volume using said storage object in figure 5
elements 520-540.

Applicant's disclosure states in paragraph 23 "...and a "snappoint" storage object including a point-in-time copy 216 or "snapshot" of said primary storage volume 210a..." and in paragraph 27 "A snapshot volume is a point-in-time copy of another volume (e.g., a primary storage volume). Therefore Green's snapshot is equivalent to applicant's point-in-time copy.

In regards to claim 30, Green discloses said volume replicator is further configured to, create a first storage object corresponding to a first storage volume in figure 44 element 4412, wherein said first storage object comprises a first point-in-time copy of said first storage volume and a first storage volume map in paragraph 131, and

copy data from said first point-in-time copy of said first storage volume to a second storage volume in figure 44 element 4414.

Allowable Subject Matter

Claims 5,6,8,16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Baker whose telephone number is (571)272-4203. The examiner can normally be reached on M-F 10am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (571)272-4210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PB


6/22/06

MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER